

# Module 5

- **Piggy bank programs**
  - **Pollution Prevention & Waste Minimization**
  - **Energy Star (energy conservation)**
- **Safer Management of Chemicals**
- **Lead in Drinking Water**
- **Healthy School Environments  
Assessment Tool**

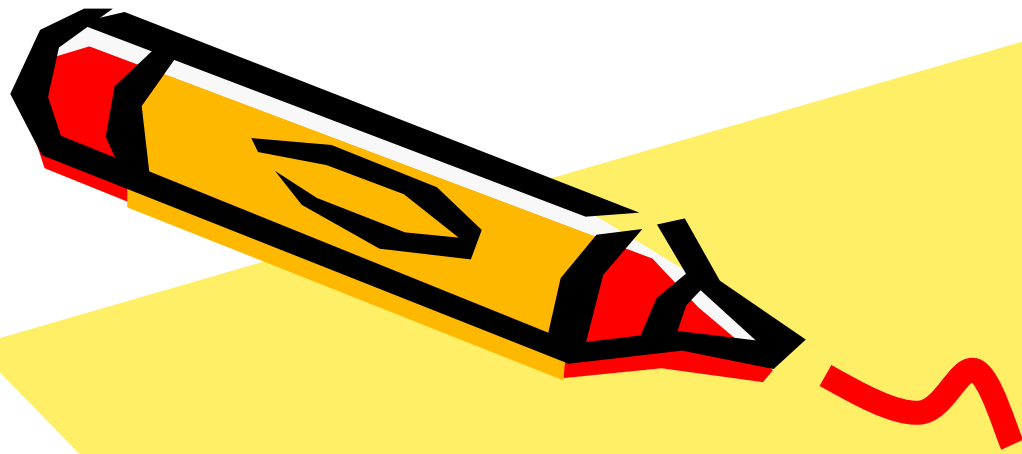


# The Piggy Bank Programs

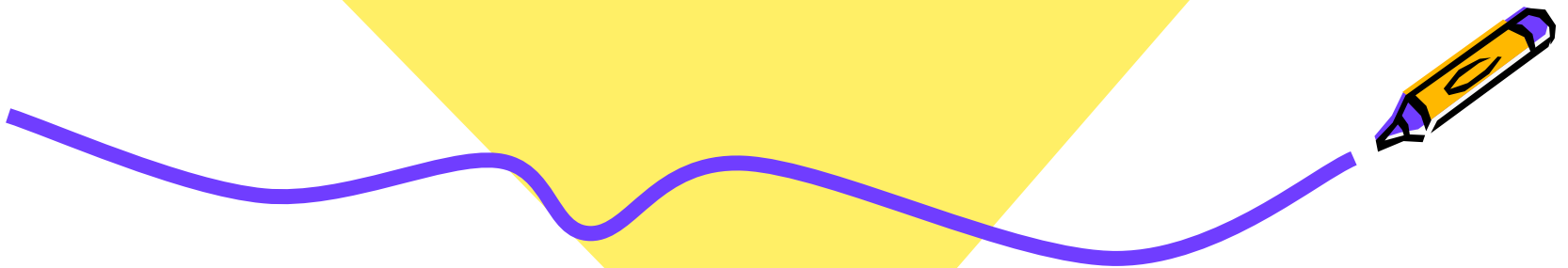
**Good for the environment**

**Good for school finances**





# Pollution Prevention and Waste Minimization



# WasteWise Program



- Free, voluntary, EPA program through which organizations (including schools)
  - eliminate costly municipal solid waste (and select industrial wastes)
  - benefit their bottom line and the environment
- Flexible program that allows partners to design their own waste reduction programs tailored to their needs
- Member organizations are eligible
  - to receive technical assistance
  - may receive recognition awards
- WasteWise Helpline available to answer specific technical questions on waste reduction



Contact: Susan Mooney, 312/886-3585  
<http://www.epa.gov/wastewise/>

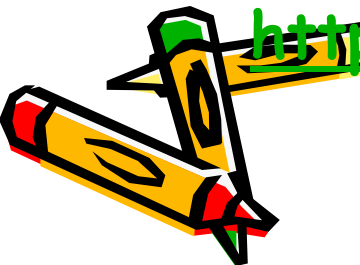
# Environmentally Preferable (EP) Purchasing



- Set up to help Federal Agencies in purchasing EP products and services BUT can help organizations such as schools improve their purchasing programs
- On-line tools and training
  - Contract language
  - Tips for planning green meetings
  - Database with product-specific information

Contact Phil Kaplan, 312-353-4669

<http://www.epa.gov/opptintr/epp/tools/toolsuite.htm>



# P2 Supported School Projects

- P2 Grants have been use to support a number of projects to assist schools including:

## Minnesota Healthy Schools Program

- pilot project, 3 MN schools
- testing ways to make changes to school buildings or operations that will give students and staff a healthier environment
  - reduces sickness
  - helps improve their work and study performance

<http://www.healthyschools.state.mn.us/>

## Healthy Schools Campaign Greener Cleaning Products

<http://www.healthyschoolscampaign.org/campaign/#greenclean>

## Illinois Greening Schools Program

<http://www.greeningschools.org/>





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# **ENERGY STAR Program**



# What is ENERGY STAR?

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- **A voluntary partnership – to protect our environment for future generations by changing to energy-efficient products and practices today.**
- **ENERGY STAR is the national symbol for superior energy performance on buildings and products.**





# ENERGY STAR

## Helps Schools

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- **Reduce energy use**
- **Save money**
- **Prevent pollution**



# What Does ENERGY STAR Offer Schools?

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- **Technical support**
- **Financing advice**
- **Web resources and tools**
- **Training presentations**
- **Recognition of achievements**
- **Communication tools and support**
- **ENERGY STAR Label for top performance**



# Resource: Portfolio Manager

*Web-based tool for benchmarking energy performance in buildings*

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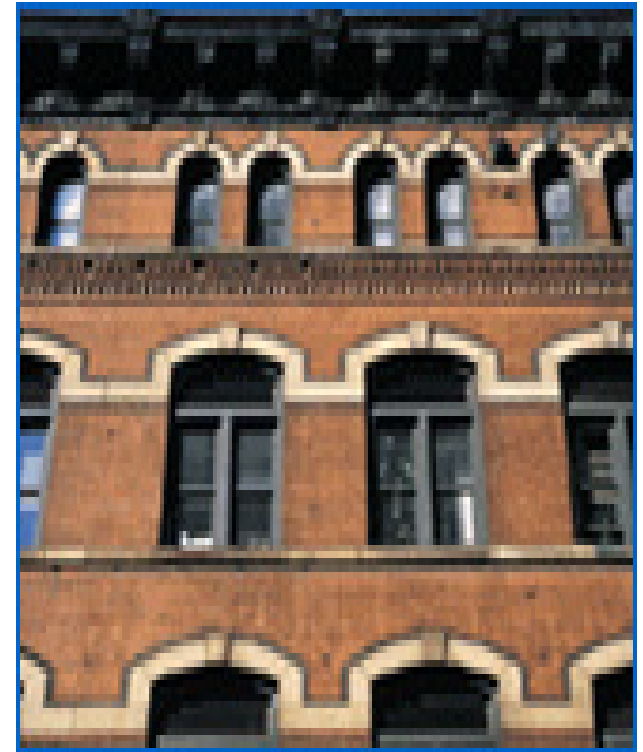
- **Value Added:**
  - ✓ Establish a baseline to understand where you are now
  - ✓ Compare your building's performance across your company and nationally
  - ✓ Create a roadmap for improvement
  - ✓ Track and measure improvement and reward success



## Success Story: Lockport Township High School in Illinois

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- **Earned Energy Star Label**
- **48,000 Sq. Ft. Building**
- **Reduced electricity usage by 1 million Kwh through energy conservation measures**
- **Saved \$80,000 in utility bills in one year**





# Information Sources

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- **Website: [www.energystar.gov](http://www.energystar.gov)**
- **Hotline: 1-888-STAR-YES  
(1-888-782-7937)**
- **Audrie Washington  
Energy Star Coordinator  
U.S. EPA, Region 5  
(312) 886-0669  
Email:  
[washington.audrie@epa.gov](mailto:washington.audrie@epa.gov)**

# Improving Management of Curriculum Chemicals in Schools

EPA's School Chemical Cleanout and  
Prevention Campaign

[www.epa.gov/sc3](http://www.epa.gov/sc3)

# Where Are The Chemicals?

- Maintenance Areas
  - Vocational Shops
  - Science Laboratories
  - Art Classrooms
  - Office Supplies
- Curriculum
- Chemicals
- 
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graph LR; Curriculum --> VocationalShops[Vocational Shops]; Chemicals --> ScienceLaboratories[Science Laboratories];
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# Why Be Concerned About Chemical Management?

- Health hazards: immediate & long-term
- Safety hazards: stability of shelves, storage methods and incompatibility
- Environmental harm: groundwater, discharges to streams/rivers, air pollution
- Hidden costs/liabilities: lawsuits, fines, Paperwork/fees, insurance premiums, etc

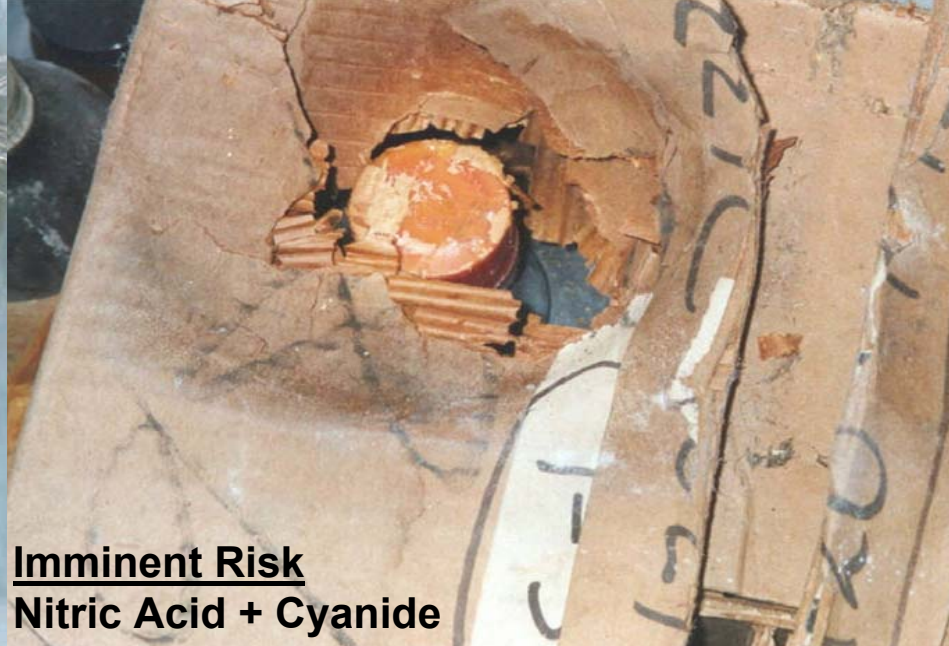


# Types of Chemicals Posing Hazards in Schools

- Extremely flammable
- Corrosive
- Poisonous
- Carcinogenic
- ANYTHING STORED IMPROPERLY
- Reactive: explosive, heat generating, fume/vapor generating
- Unknowns



**Unknown, Unintended Chemical Reactions**



**Imminent Risk**  
**Nitric Acid + Cyanide**

## **Potential Incidents**



**Inadequate storage and labeling**

# Why are there problems with chemical management in schools?

- Lack of awareness
- Lack of environmental management system
- Lack of "somebody in charge" (add-on duty)
- Discount warehouse store effect
- Spend it or lose it monies

## **Why are there chemical management problems in schools? (contd)**

- **Stockpiles from the 1950's – era of Sputnik and technology race**
- **Often little communication across Academic, Administrative, & Facilities departments**
- **Facilities often not built for handling chemicals (ventilation, storage problems)**

# What Schools Should Do : Short Term

- **Get rid of the Stockpiles !!!!!**
- **Develop a chemical management system**
  - Purchase
  - Storage, including labeling
  - Use, including labeling
  - Disposal
  - Emergency Planning – spills, explosions, accidents

# What Schools Should Do : Longer Term

- Use safer chemicals & less too
- Prohibit certain chemicals period?
- Order “safer” alternatives, packaging, dilutions, kits
- Centralize inventory/purchasing
- Regularly budget for removals (Cradle to grave)
- Address chemical issues in context with other environmental concerns

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# Need To See “The Big Picture”

- Chemical management can affect
  - Safety
  - Health
  - Indoor Air Quality
- Chemical mismanagement can affect
  - Drinking Water Quality
  - Stormwater Quality
- Environmental stewardship

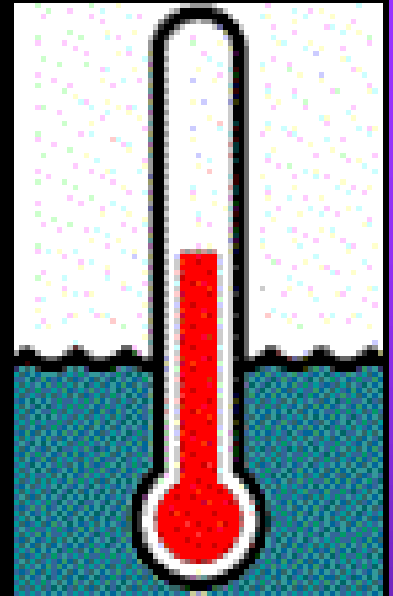
# Need To See “The Big Picture”

- **Look At Chemical Management as part of bigger set of EHS Issues (e.g.)**
  - Poor IAQ
  - Pests /pesticide use
  - Mold
  - Deferral of maintenance
  - Funding
- **Environmental Management Systems (EMS) - puts issues in context & addresses continuous improvement**



## Special Case : Mercury

- Schools should get rid of mercury
  - Bulk
  - Equipment
- Any Hg spill greater than 1 fever thermometer is a LARGE spill – get help!



## Special Case : Mercury

- Hg is Heavy !  
1 pound = 2 Tablespoons
- Any Hg spill greater than 2 Tablespoons must be reported
- Mandatory reporting to National Response Center (NRC)
  - Hotline operates 24 hours a day, 7 days a week
  - Call (800) 424-8802

# In Cleaning Up Small Hg Spills

- Never use
  - Broom
  - Vacuum cleaner
- Don't pour down drain



# Lead in Drinking Water

# Lead Health Effects

- Young children are highly susceptible to lead (potential delays in physical and mental development)
- Main exposures are through ingested dust and paint chips
- BUT ...10-20% of exposure may come from drinking water
- Infants on mixed formula can receive 40-60% of their lead exposure from drinking water



# How does lead get into the water?

- Most lead in school and household drinking water comes from the plumbing, not from local public water systems (“PWSs”)
- Lead enters the water through by leaching due to corrosion of:
  - pipes; solders; fittings; fixtures and faucets (brass)
- The amount of lead in water depends on several factors including
  - Water’s acidity
  - Temperature
  - Length of time the water sits in pipes



# Lead in School Drinking Water

- PWSs are required to test their water for lead BUT most schools not PWSs
- Schools receiving water from a PWS may still have too much lead in their water, even if their PWS meets the action level (due to plumbing materials and water usage)
- Since children spend lots of time at school/daycare, school officials should test each outlet that provides water used for consumption



# Testing School Drinking Water

- Testing the water at each outlet is the only sure way to find out if the water has too much lead
- Action should be taken if a school outlet is above 20 ppb
  - Note: Technical questions should be referred to our drinking water program





# Quick Tips for Reducing Children's Exposure to Lead

- Use cold water for drinking or cooking. Never cook or mix infant formula using hot water from the tap
- Boiling water will not get rid of lead
- “Flush” water faucets not used for 6 hours or more by running the water until it becomes as cold as it will get (5 seconds to 2 minutes)
- If you use a filter to remove lead, be sure it's certified to remove lead by the NSF ([www.nsf.org](http://www.nsf.org))
- Read the annual report you get from your PWS to find out how they are working to reduce lead levels and to get other information about your drinking water
- The Safe Drinking Water Hotline is also available for questions: 1-800-426-4791

# **New School Toolkit**

## **3Ts for Reducing Lead in Drinking Water at Schools and Child care Facilities**

- **Training school officials**
- **Testing drinking water in schools to identify potential problems and take corrective actions as necessary**
- **Telling students, parents and staff about monitoring programs, potential risks, the results of testing, and remediation actions**

# For More Information

## ➤ Internal EPA Contact

- Kimberly Harris, 6-4239

## ➤ External

**Call Safe Drinking Water Hotline  
1-800-426-4791**

**(they will direct call to appropriate  
organization, e.g. EPA, state...**

# Introducing



# HealthySEAT

**The Healthy School Environments Assessment Tool**





# Environmental Issues in Schools

## Exposure Issues

- **Indoor environmental quality**
  - Mold & other allergens
  - Pesticides
  - Product emissions (VOCs)
  - Mercury
  - PCBs
  - Asbestos
  - Lead
- **Outdoor air pollution**
  - Diesel
  - Ozone
  - Particulate Matter
- **Site contamination**
- **U/V Radiation**
- **Waste**
- **Water**



## Related Issues

- **High Performance Schools/Green Schools**
- **Energy Efficiency**
- **Cleaning**
- **Integrated Pest Management**
- **Student Performance**
- **School Siting**
  - Sprawl vs. Smart Growth
- **Emergency Preparedness**
- **Renovation**
- **Construction**
- **Commissioning**
- **Acoustics**
- **Day Lighting**
- **Life Cycle Costing**
- **Financing**
- **Safety**
- **Other School health issues**



# **EPA Healthy School Environments Initiative**



- **EPA-wide sector approach to K-12 schools to improve EPA service to the schools community**
- **Improved strategic planning and coordination across existing EPA programs**
- **Promotes comprehensive, whole building environmental approaches (e.g., high performance/green buildings)**
- **Develop integrated environmental assessment tools**



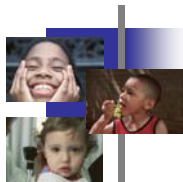
# Healthy School Environments Web Portal

[www.epa.gov/schools](http://www.epa.gov/schools)

## Current Topics:

- Chemical Management
- Design Construction and Renovation
- Energy Efficiency
- Environmental Education
- Indoor Environmental Quality
- Legislation and Regulation
- Outdoor Air Pollution
- Portable Classrooms
- Safety and Preparedness
- Waste
- Water





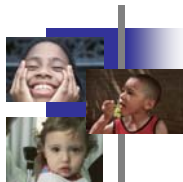
# Healthy School Environments Assessment Tool



- **Self-audit software tool**
- **Completely voluntary**
- **Fully customizable**
- **Intended for school district and state use**
- **Based on:**
  - **LAUSD facility assessment tool**
  - **EPA guidance and regulations**
  - **Existing State and district checklists**
- **No reporting requirements**







# Healthy SEAT Can Help You Promote Your Own Program



- Includes all school-related issues / programs
- Districts can learn about EPA programs they haven't yet implemented
- Differs from EPA programs
  - Healthy SEAT helps districts manage information about multiple issues at school districts
  - Programs focus attention on factors impacting schools every day



# EPA Schools Web Site



**[www.epa.gov/schools](http://www.epa.gov/schools)**

**One-stop shopping for:**

- **Healthy School Environments Assessment Tool**
- **Links to all EPA programs, and many federal, state, and local web resources**

**National EPA Contacts:**

**Bob Axelrad, 202-343-9315  
Bill Jones, 213-244-1817**

**Region 5 Contact:**

**Maryann Suero, 312-886-9077**